

## Postdoctoral Research Fellowship in Solar Thermal Heating of Industrial Processes

Stellenbosch University's Centre for Renewable and Sustainable Energy (CRSES), hosted within the Faculty of Engineering, is seeking an applicant for a Postdoctoral Research Fellow in the field of solar thermal heating of industrial processes to support the SOLTRAIN+ initiative.

The Centre for Renewable and Sustainable Energy Studies (CRSES) at Stellenbosch University enables a sustainable future for Africa through world-class renewable and sustainable energy research, advisory services, awareness campaigns and training programmes. It was established in 2007 to facilitate and stimulate activities in renewable energy studies and research at the world-class Stellenbosch University and works partnership with other universities and research entities in South Africa and internationally.

SOLTRAIN is an initiative supported by the Austrian Development Agency seeking to build capacity and demonstrate solar thermal systems in the SADC region. SOLTRAIN aims to support target countries in changing from a largely fossil-based energy supply system to a sustainable supply structure based on renewable energy in general, and on solar thermal in particular.

Solar heating for industrial processes involves harnessing solar energy to provide heat for various manufacturing and industrial activities. This sustainable approach utilizes solar thermal technologies, such as solar collectors and concentrators, to capture and convert sunlight into usable heat energy. Industrial processes that require heating, such as drying, sterilization, and material processing, can benefit from solar heating systems. As the global emphasis on clean and renewable energy solutions continues to grow, integrating solar heating into industrial processes becomes an essential step toward achieving environmentally friendly and economically viable production methods.

### Hosts:

- Prof Craig McGregor ( [craigm@sun.ac.za](mailto:craigm@sun.ac.za) )
- Mrs Monique Le Roux ( [moniqueleroux@sun.ac.za](mailto:moniqueleroux@sun.ac.za) )

**Location:** [Centre for Renewable and Sustainable Energy Studies](#), Stellenbosch University, Stellenbosch, South Africa.

### Duties and responsibilities:

The research fellow will be expected to:

- Perform research and publish the results at local and international conferences and in high-impact journals.
- Assist with demonstration projects and the implementation of solar thermal systems at various locations across the Western Cape. Suitable companies need to be identified and thermal systems must be designed for optimal use.
- Collect and monitor data and optimise the thermal systems after installation. Data needs to be analysed to optimise the system for effective use. This monitoring data will compare expected and achieved performance indicators (including energy, cost and CO<sub>2</sub>/GHG savings), serving as the basis for optimisation and reporting.
- Assist with awareness-raising and training events as well as publishing results and research through relevant conference papers, webinars, presentations, etc.
- Assist with project administration, including setting up meetings and training sessions, project budgeting and overall project coordination.
- Initiation and development of specific financing schemes and business plans.

**General requirements:**

- A PhD in a relevant field (preferably mechanical or mechatronic engineering):
  - must have graduated within the last five years,
  - candidates with a confirmed examination outcome who have not yet graduated may apply (proof required);
- Excellent communication skills in English (both written and verbal);
- A proven publication record in high-impact journals and a demonstrated capacity to conduct independent research.

**Fellowship:** CRSES currently has funding for one fellowship of R 400 000 for 2024. The fellowship is renewable for up to three years, subject to satisfactory performance and funding availability. Please note that postdoctoral fellows are not appointed as Stellenbosch University employees. The fellowship is thus exempt from tax, and the appointment does not include employee benefits.

**Commencement of duties:** March 2024 or as soon as possible after that.

**Application closing date:** 17h00 on 15 February 2024.

**Application process:** Send a letter of application, accompanied by a comprehensive curriculum vitae, including a list of publications, a link to the candidate's PhD thesis, and the names and contact details of two referees, to Prof Craig McGregor ([craigm@sun.ac.za](mailto:craigm@sun.ac.za)).